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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,231	09/08/2005	Reinhard Plaschka	2732-156	8668
6449 7590 12/09/2008 ROTHWELL, FIGG, ERNST & MANBECK, P.C. 1425 K STREET, N.W. SUITE 800 WASHINGTON, DC 20005				
EXAMINER GRABOWSKI, KYLE ROBERT				
ART UNIT 3725		PAPER NUMBER		
NOTIFICATION DATE 12/09/2008		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

### Office Action Summary

**Application No.**

10/521,231

**Applicant(s)**

PLASCHKA ET AL.

**Examiner**

Kyle Grabowski

**Art Unit**

3725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date: \_\_\_\_\_

## DETAILED ACTION

### Examiner's Note

1. This is a non-final action in response to the RCE filed on 09/04/08.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 6-8, 10-12, 14, 24-27, 30-32, and 34-36, are rejected under 35 U.S.C. 102(b) as being anticipated by Costin (US 5,990,444).
4. In respect to claims 1 and 14, Costin discloses a paper 80, for example a cotton/polyester blend (Col. 20, 60) having at least one tangible marking 81 in the form of a relief structure wherein the relief structure is formed from cotton fibers of the paper via a laser (Col. 21, 13-31). The application of this extends to counterfeiting prevention, effectively making the cotton/polyester paper a "document of value/security paper" (Col. 3, 37-40).
5. In respect to claims 2-4, the tangible markings 81 become a slightly darker color, effectively a "blackening", after application of the laser (Col. 21, 22-25)

6. In respect to claim 6, dyes may be used to change to different colors upon laser exposure (Col. 25, 48-56).
7. In respect to claims 7-8 and 34, the paper may be a cotton/polyester composite as described above; cotton being an example of an annular plant (Col. 20, 60).
8. In respect to claims 10-12, the tangible marking (graphics) may be made with discontinuous lines to create complex patterns, for example, a shooting star produced on cotton (Col. 27, 12-18).
9. In respect to claims 24-27, and 30-31, the methods claimed are disclosed for the reasons stated above including using a Nd:YAG laser (Col. 28, 38-41) which may be employed in a "high-speed fashion" (see Table 6)
10. In respect to claims 32 and 35-36, the intended uses of the security paper with counterfeiting prevention is not patentable subject matter.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 5, 9, and 33, are rejected under 35 U.S.C. 103(a) as being unpatentable over Costin (US 5,990,444). Costin substantially discloses the claimed subject matter for the reasons stated above but does not disclose that the relief height is between 30 $\mu$ m and 100  $\mu$ m (or more specifically 30 $\mu$ m and 80  $\mu$ m). Costin teaches that a wide range of energy density per unit time (EDPUT) for cotton blends (see Table 4) and in fact the premise of the invention is controlling the EDPUT to obtain desired results in materials (e.g. cotton) without destroying the material (Abstract); Cosin also teaches that desired EDPUT will often vary with perimeters such as the size and type of the tangible marking (graphic) (Col. 11, 23-26). The claim would have been obvious because a particular known technique was recognized as part of the ordinary capabilities of one skilled in the art. In this case the adjustment of the EDPUT is disclosed and reaching a particular height such as 30-100 $\mu$ m or 30-80 $\mu$ m is routine experimentation that Costin contemplates. Furthermore, there is no apparent critically in the present applicant's specification for this range.

14. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Costin (US 5,990,444) in view of Schnell (WO/98/03348). Costin substantially discloses the claimed subject matter for the reasons stated above but does not disclose that the tangible markings are connected with different information on a document of value

however Schnell disclose a similar document wherein an identification mark created by a change of thickness in the paper '30' (analogous to the tangible marking) is repeated at a different location (for example printed) '36812094(30)' (Fig. 1, Abstract) and it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the tangible marking taught in Costin with an identical printed marking in view of Schnell to clearly link the printed marking to the substrate (Schnell, Abstract, Fig. 1).

15. Claims 1, 15-16, 23, and 28, are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer (US 4,507,346) in view of Costin (US 5,990,444).

16. In respect to claims 1, 15-16, and 23, Maurer discloses a multilayer security element including a paper 10 (Fig. 2) and a tangible marking in the form of a relief structure 13 (Fig. 2) that is "burned or discolored in the area of the data in relief" (Col. 8, Lns 25-26) by "absorption of the laser" (Col. 8, Ln 20). Maurer does not disclose that the relief structure is formed from cotton fibers in the paper however Costin discloses applying laser energy directly to a cotton/polyester blend to form a tangible marking as described above and it would have been obvious to one of ordinary skill in the art to modify the laser taught in Maurer with different energy density per unit time (EDPUT) values in view of Costin to overcome technical barriers (complete carbonization, melting, and/or burning of material) which have prevented the use of lasers on such materials (e.g. cotton/polyester blend) in the past (Costin, Col. 1, 65 - Col. 2, 34). All of the claimed elements were known in prior art and one skilled in the art could have

combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

17. In respect to claim 28, Maurer in view of Costin disclose that the cover coating 11 is applied before laser inscription; the tangible marking 13 is produced in the area of this coating (Col. 7, Lns 17-18, Fig. 2, Maurer).

18. Claims 17-22, and 29, are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer (US 4,507,346) in view of Costin (US 5,990,444) as applied to claims 1, and 15-16 above, and further in view of Solmsdorf (US 6082778).

19. In respect to claims 17-18, 20-21, and 29, Maurer in view of Costin substantially disclose the claimed subject matter for the reasons stated above (including a dye print, Costin) but do not disclose a plastic layer and metal layer with the metal layer removed at least in the area by a laser, or incorporation of a print into the coating layer.

Solmsdorf discloses: a plastic layer 6, including print coating 4 (Fig 4), a metal layer 7 (Fig 4), and cavities of removed metal via laser 10 (Fig 4). The plastic layer consists of a "diffraction pattern" (Clim 6). There is a junction between metal foil 7 and card layer 9 (Fig 4); the tangible marking 5b extends beyond the foil/card (Fig 2). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the document and laser treatment taught in Maurer in view of Costin applied with the copy protection element (cover foil and plastic) in view of Solmsdorf in order maximize security by utilizing both features in unison under the same laser. All of the

claimed elements were known in prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

20. In respect to claim 19, Maurer as modified by Costin in further view of Solmsdorf substantially disclose the claimed subject matter for the reasons stated above but do not disclose that the area of the removed metal layer is larger than the area provided by the tangible marking. Again, Costin teaches that a wide range of energy density per unit time (EDPUT) for cotton blends (see Table 4) and in fact the premise of the invention is controlling the EDPUT to obtain desired results in materials (e.g. cotton) without destroying the material (Abstract); Costin also teaches that desired EDPUT will often vary with perimeters such as the size and type of the tangible marking (graphic) (Col. 11, 23-26). Solmsdorf also teaches that the lasering is reduced in the area of the metal layer so that the marking solely exists in the metal area (Col. 3, 50-52) –or in other words, the metal layer is ablated easier (owing perhaps to its thickness as Costin suggests). The claim would have been obvious because a particular known technique was recognized as part of the ordinary capabilities of one skilled in the art. In this case the adjustment of the EDPUT is disclosed and tangible marking or ablation area depending on material thickness is disclosed (Col. 11, 23-26), and it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a comparatively easily ablated metal layer as to not obscure the underlying relief pattern.



21. In respect to claim 22, a tangible relief marking disposed underneath a printed coating layer as taught in Maurer as modified by Costin in further view of Solmsdorf will naturally result in an optically variable element i.e. stretching of the printed layer.

22. In respect to claim 29, Solmsdorf additionally teaches that the identity card 1 with "copy protection element 2 (Fig. 1) is applied to the cover layer of the identity card by the transfer method" (Col. 3, Ln 25-26).

### ***Response to Arguments***

23. Applicant's arguments with respect to claims 1-36 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyle Grabowski whose telephone number is (571)270-3518. The examiner can normally be reached on Monday-Thursday, every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dana Ross can be reached on (571)272-4480. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner, Art Unit 3725

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